

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Serial No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
PO038420	TWM001-VU	1	1	Net 30	M4130NT1.000W.120	4130 Round Tube 1.00 X .120Wall : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft				20	11/28/2017	✓ 20		✓ S017136	Stock	12/4/2017	\$ 2.88 / ft	0		\$58.56	TW Metals
		2			M304TR0.750W.049	304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				180		✓ 180		✓ S017137	Stock	12/4/2017	\$ 2.10 / ft	0		\$336.00	TW Metals
		3			M304TR0.500W.049	304 Round Tube .500 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				40		✓ 40		✓ S017138	Stock	12/4/2017	\$ 2.80 / ft	0		\$112.00	TW Metals
		4			M6061T6T0.625W.065	6061-T6 Round Tube .625 X.065W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				36		✓ 36		✓ S017139	Stock	12/4/2017	\$ 3.15 / ft	0		\$113.40	TW Metals
		5			M6061T6T0.375W.058	6061-T6 Round Tube .375 X.058W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				24		✓ 24		✓ S017140	Stock	12/4/2017	\$ 2.15 / ft	0		\$51.60	TW Metals
		6			M6061T6T0.625W.125	6061-T6 Round Tube 0.625 X.125W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				12		✓ 12		✓ S017141	Stock	12/4/2017	\$ 5.15 / ft	0		\$61.80	TW Metals
		7			M4130NT0.750W.049	4130 Round Tube .750 X.049W : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft				24		✓ 24		✓ S017142	Stock	12/4/2017	\$ 11.48 / ft	0		\$274.46	TW Metals
		8			M4130NT0.750W.083	4130 Round Tube .750 X.083W : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft				20		✓ 20		✓ S017143	Stock	12/4/2017	\$ 3.85 / ft	0		\$78.28	TW Metals
Total:										336		337								\$1,086.10	



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80895542

FROM: CHIC

PAGE 1

CUST NUMBER: 1203820 NET WGT: 121.060 REQ. DATE: 11/28/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 11/22/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: P0038420 RELEASE NO.:
RECEIVING PHONE:

LINE	ITEM DESCRIPTION	WIDTH	LENGTH
0001	33364 SMLS CD 4130 RD 6736 1 X .120		17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	20.000 FT	20.333 FT	20.333 FT	22.936	1

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
PO: 49371988 HT: 606333 PC: 1 CUSTOMER QTY: UOM
MLT: GERMANY MFG: GERMANY SLB/CL: 1639142

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
0002	36860 SMLS CD 304/L A269 3/4 OD X .049 WA		20' CL		

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	160.000 FT	160.000 FT	160.000 FT	58.675	8

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO: 49363338 HT: YX1108593 PC: 8 CUSTOMER QTY: UOM
MLT: CHINA MFG: CHINA SLB/CL: -

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
0003	36506 SMLS CD 304/L A269 1/2 OD X .049 WA		20' ML		

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	40.000 FT	40.000 FT	40.000 FT	9.437	2

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO: 49361319 HT: YX1604531 PC: 2 CUSTOMER QTY: UOM
MLT: CHINA MFG: CHINA SLB/CL: -

SP1A-124

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80895542

FROM: CHIC

PAGE 2

CUST NUMBER: 1203820 NET WGT: 121.060 REQ.DATE: 11/28/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 11/22/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: P0038420 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
0004 42558 D6061-T6 5/8 OD X .065 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	36.000 FT	36.000 FT	36.000 FT	4.821	3

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49369003 HT:F002408380002 PC: 3 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:223156

0005 41952 D6061-T6 3/8 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	24.000 FT	24.000 FT	24.000 FT	1.627	2

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49376296 HT:F002504860001 PC: 2 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:224194

0006 42588 D6061-T6 5/8 OD X .125 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	12.000 FT	12.000 FT	12.000 FT	2.771	1

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49370848 HT:F002436350002 PC: 1 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:223458

807-124

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O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80895542

FROM: CHIC

PAGE 3

CUST NUMBER: 1203820 NET WGT: 121.060 REQ.DATE: 11/28/17 CONFIRMED
 SOLD TO: SHIP TO:
 DART AEROSPACE LTD DART AEROSPACE LTD
 1270 ABERDEEN ST 1270 ABERDEEN ST
 HAWKESBURY ON HAWKESBURY ON
 CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 11/22/17
 TERMS: NET 30 DAYS VIA: COMMON CARRIER
 F.O.B.: SHIPPING POINT FREIGHT: PREPAID
 CUST ORD NO.: PO038420 RELEASE NO.:
 RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
 0007 33047 CDS 4130 6736 3/4 X .049 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	24.000 FT	23.917 FT	23.917 FT	8.771

PCS
1

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
 PO:49371988 HT:606338 PC: 1 CUSTOMER QTY: UOM
 MLT:GERMANY MFG:GERMANY SLB/CL:1639142

0008 33096 SMLS CD 4130 6736 3/4 OD X .083 WA 17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT
	20.000 FT	20.333 FT	20.333 FT	12.022

PCS
1

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR Expiration Date: 0/00/00
 PO:49365374 HT:603114 PC: 1 CUSTOMER QTY: UOM
 MLT:GERMANY MFG:GERMANY SLB/CL:1634562

BROKERS KUEHNE AND NAGEL LTD

AREA		TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
YRC		REDDICRATE	1.000	221.000		24.5000	
YRC		REDDICRATE	1.000			20.5000	
			2.000	221.000			

BY: LM

THANK YOU FOR THIS ORDER

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O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 80895542

FROM: CHIC

PAGE 4

CUST NUMBER: 1203820 NET WGT: 121.060 REQ.DATE: 11/28/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 11/22/17
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO038420 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION
RT 000-

WIDTH LENGTH
UNLOAD TYPE: NONE SPECIFIED

808-10-4

DATE SHIPPED _____

DATE FILLED _____

1
THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
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O Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 80895542

FROM: CHIC

PAGE 5

CUST NUMBER: 1203820 NET WGT: 121.060 REQ.DATE: 11/28/17 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 11/22/17
TERMS: NET 30 DAYS 235 TUBEWAY
F.O.B.: SHIPPING POINT CAROL STREAM IL 60188
CUST ORD NO.: PO038420
VIA: COMMON CARRIER
FREIGHT: PREPAID
RELEASE NO.:
RECEIVING PHONE:

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk *Luziraida Matos* Date: 11/22/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038420

Supplier: TWM001-VU
TW Metals
PO Box 933014
Atlanta, GA 31193-3014 USA
Phone: 585 768 5600
Fax: 585 768 5601

PO No: PO038420
PO Date: 11/20/17
Due Date: 11/28/17
Purchase Order Revision:
Revision Date:
Ship-To Contact: Phone:

E-MAILED
NOV 20 2017

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items											
Line Item	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	M4130NT1.000W.120	-	4130 Round Tube 1.00 X .120Wall : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft		Firmed	11/28/17	20 ft	0 ft	20 ft	\$2.8858/ft	\$57.72
2	M304TR0.750W.049	-	304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft		Firmed	11/28/17	160 ft	0 ft	160 ft	\$2.10/ft	\$336.00
3	M304TR0.500W.049	-	304 Round Tube .500 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft		Firmed	11/28/17	40 ft	0 ft	40 ft	\$2.80/ft	\$112.00
4	M6061T6T0.625W.065	-	6061-T6 Round Tube .625 X .065W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR		Firmed	11/28/17	36 ft	0 ft	36 ft	\$3.15/ft	\$113.40



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038420

Items											
Line Item	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
			ASTM B241 receive ft								
5	M6061T6T0.375W.058	-	6061-T6 Round Tube .375 X.058W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft		Firmed	11/28/17	24 ft	0 ft	24 ft	\$2.15/ft	\$51.60
								24 ft			
6	M6061T6T0.625W.125	-	6061-T6 Round Tube 0.625 X.125W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft		Firmed	11/28/17	12 ft	0 ft	12 ft	\$5.15/ft	\$61.80
								12 ft			
7	M4130NT0.750W.049	-	4130 Round Tube .750 X.049W : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft		Firmed	11/28/17	24 ft	0 ft	24 ft	\$11.4754/ft	\$275.41
								24 ft			
8	M4130NT0.750W.083	-	4130 Round Tube .750 X.083W : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft		Firmed	11/28/17	20 ft	0 ft	20 ft	\$3.85/ft	\$77.00
								20 ft			
Grand Total: \$1,084.93											

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038420

Order Notes

A042 dart notification by supplier

A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 11/20/17 2:08 PM DART.LAVOIE.CHANTAL


Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER 
Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

TW Metals
The Abbeysum, Suite 204,
760 Constitution Drive
EXTON PA 19341
USA

Dokument-Nr.: Document No.:	41-1023590/001/Z	Prüf-Nr.: Inspection No.:	Blatt 1 / 4
No. du document:		No. du certificat:	Page:
Kunden-Bestell-Nr.: Purchase Order No.:	46005343 TW M49371988	Hersteller: Manufacturer:	Wärmehaube/Zieherei
No. de commande du client:		Produkteur:	IDM EN ISO 9001, ISO/TS-16949 CERTIFIED BY TÜV NORD CERT. IFPD 2014/89/EU CERTIFIED BY TÜV NORD SYSTEMS
Benteler Auftrags-Nr.: Benteler Order No.:	1639142	Herstellerzeichen: Manufacturer's brand:	
No. de commande Benteler:		Marque du producteur:	
Versandanzahlen-Nr.: Dispatch Note No.:	4114198	Stempel des Abnahmebeauftragten: Stamp of the inspection representative:	W/A
No. d'avis d'expédition:		Poinçon du contrôleur:	
Produkt: Product:	NAHTLOSE STAHLROHRE SEAMLESS STEEL TUBES	Stahlschmelzungsverfahren: Steelmaking process:	ELEKTROSTAHL ELECTRIC FURNACE
Produkt: Product:	TUBES D'ACIER SANS SOUDURE	Procédé d'élaboration de l'acier:	FOUR ELECTRIQUE

AMS-T-6736B-08 Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K

Lieferbedingungen:
Terms of delivery:

AMS-T-6736B-08 Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K

Conditions de livraison:

Maße - Toleranzen:
Dimensions-tolerances:

AMS 2253E-83, Aircraft Type, Seamless, Cold Finished

Dimensions-tolerances:

Stahlsorte:

GRADE 4130

Steel grade:

Nuance d'acier:

Lieferzustand:
Delivery condition:

Condition N

Etat de livraison:

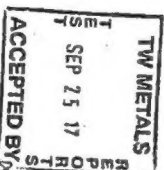
Produktkennzeichnung:

FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO.
CD AQ.S DIMENSIONS WA GERMANY

Product marking:

Marquage du produit:

AZ = Auszeichnung, Etching ink marking, Grave à l'encre, FK = Farbmarkierung, color marking, marquage par couleur, FS = Fabrikation, point stamping, marquage par poinçon, FSD = Fabrikation, Code la grille, imprimante à jet d'encre de couleur, LK = Lasermarkierung, laser marking, Marquage laser, PSE = Etikettierung, tag marking, marquage par étiquette, PS = Prägestempel, die stamp, marquage par poinçonage, TS = Trennschmelzverfahren, ink-jet spray marking, imprimante à jet d'encre.



ACCEPTED BY 

10

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49 5254 81-0 Fax: +49 5254 13666

BENTELER

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-1023590/001/Z
Document No.:
No. du document:
Prüf-Nr.:
Inspection No.:
No. du certificat:
Blatt: 2 / 4
Page:
Page:

Pos.	Stück Item	Maße Number Dimensions	Gesamtlänge Length total Longueur totale	Gewicht Weight Poids	Schmelzen-Nr. Heat No. No. de coulée	Prüfdruck Test pressure Pression d'épreuve	Rohr-Nr.-Gruppe Tube number group Série de no. des tubes	Vielfachlängen Multiple lengths Longueurs multiples
0025	216	1.000" O.D. * 0.120" WT 20 FT - 24 FT	4393,70	4912	606333			

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr. Item	C	SI	MN	P	S	CR	MO	NI	CU
0025	606333	0,330	0,250	0,52	0,008	0,002	0,87	0,18	0,11	0,12

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr. Item	C	SI	MN	P	S	CR	MO	NI	CU
0025	606333	0,320	0,260	0,50	0,008	0,001	0,89	0,18	0,11	0,13

Prüfergebnisse / Test results / Résultats des essais

Die Rohre wurden zerstörungsfrei geprüft:
The tubes are non-destructive tested:
Les tubes ont passé un essai non destructif:
ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperfections;
ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections;
Notch depth: 0,30 mm; notch width: < = notch depth; notch length min. 2 x transducer width (max. 50 mm)

Augensichtkontrolle: Visual inspection: Examen visuel	PASSED	Materialverwechslungsprüfung: Material conformity test: Vérification de la nuance	PASSED	Maßkontrolle: Dimensions examination: Vérification des dimensions	PASSED
---	--------	---	--------	---	--------

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'échantillonnage était réalisé aux longueurs multiples.



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Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49 5254 81-0 Fax: +49 5254 13668

BENTELER
Steel/Tube

Blatt: 3 / 4
Page:
Page:

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-1023590/001/Z

Prüf-Nr.:
Inspection No.:
No. du certificat:

Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complete

Pos. Item Poste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement
Anforderungen Requirements Exigences			mm	Rp 0,2 % KSI MIN 75	Rm KSI MIN 95	A2 ^m % MIN 12.00
0025	000001	606333	25,40 X	3,00	100	118
0025	000002	606333	25,40 X	3,00	99	22,00
0025	000003	606333	25,40 X	3,00	100	22,00
0025	000004	606333	25,40 X	3,00	99	22,00
0025	000005	606333	25,40 X	3,00	99	24,00

Randentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0025

acc. to AMS-6360, partial decarburization outside max. 0.017 in, partial decarburization inside max. 0.017 in, partial decarburization outside and inside max. 0.022 in, partial decarburization outside and inside max. 0.559 mm, without total decarburization, partial decarb. out. max.: 0.432 mm; partial decarb. ins. max.: 0.432 mm

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0025

Certificate remarks: The steel grade corresponds to MIL-T-6736B / AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K / Semi finished product examination, see appendix page 1 of 1

Pos. / Item / Poste: 0025

Macroscopic examination: acc. to ASTM-E 381

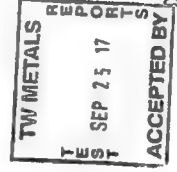
Pos. / Item / Poste: 0025

Magnetic particle inspection: acc. to AMS-2301K/ASTM-E 1444, on prematerial

Pos. / Item / Poste: 0025

Grain size: acc. to ASTM-E 112; Grain size and fineness: 5; Grain size: Longitudinal structure microscopy, on prematerial

Verkäufer(in) / Sales Personnel / Personne chargée : Mr Schwarz; Tel.: 05254 81-204311, Fax: 204391



AS

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: +49 5254 81-0 Fax: +49 5254 13665

BENTELER

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

41-1023590/001/Z

Dokument-Nr.:
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

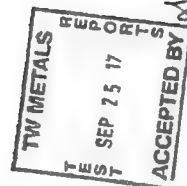
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Page:
Page:

Paderborn Schloß Neuhaus, 21.08.2017, TEL.: 05254.81-201766 FAX: 05254.81-201752

Abnahmebeauftragter
Inspection representative
Contrôleur

i. A. THOMAS GOLLAN / ICK

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specifications. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique et est valide sans signature.



1/5

Benteler SteelTube GmbH
Residenzstraße 1
33104 Paderborn
Germany
Tel.: 49 5254 81-0 Fax: 49 5254 13666

BENTELER
Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang
Inspection Certificate EN 10204.3.1 / appendix
Certificat de réception EN 10204-3.1 / appendice

Dokument-Nr.
Document No.:
No. de document:

41-1023590/001/Z

Blatt: von
Page: 1 of 1
Page: de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi-finished product examination: grade 4130 / Produit semi-fini: nuance 4130

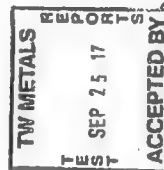
Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härtbarkeit (min. Anforderungen) Hardenability (min. requirements) Trempeabilité (exigence min.) (ASTM-A 255)		Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301 K/ASTM-1444)	Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)		
			J(5/16") min. 35 HRC	J(8/16") min. 28 HRC		max. S 2	max. R 1	max. C 2
606333 Decarburization Depth	025	min. 5	43	34	F max. 0,34 S max. 0,25	S 2	R 1	C 2
		Outside 0,045 mm Inside 0,000 mm			0,020 0,020			

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 21.08.2017
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

Abnahmebeauftragter
Inspection representative
Contrôleur

Thomas Gollan



AS

MILL TEST REPORT

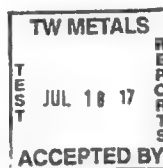
Purchaser.: TW METALS-Carol Stream				Certificate No.: 2017-6-59					
Contract No.: TWMP.O.No.: M49363338				Date of Issue.: 2017.6.12					
Commodity: Stainless Steel Seamless Tubes			Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW						
Process: Cold Drawn			Delivery Condition: OD Polished to 240 Grit						
Steel Grade	Heat Number	Lot Number	Dimensions		Quantity				
					Pieces	Feet			
TP304/TP304L	YX1108-593	3-82	3/4"x0.049"x20'		250	5,000			
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.023	0.70	0.032	0.001	0.36	18.50	8.05	-	-
Product Analysis	0.020	0.67	0.034	0.002	0.34	18.67	8.13	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	63/64		97,000/98,000			41,000/42,000			
Test Item	Reduction of Area Z (%)		Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test	
Requirements	-		HRB≤80	-	22%	e=0.09	-	-	
Test Results	-		76/78	-	Passed	Passed	-	OK	
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested



**CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA**



By:

James Shi

James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Jiangsu Pufa Stainless Steel Tube Co., Ltd.

No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China

16

MILL TEST REPORT

Purchaser.: TW METALS-Carol Stream				Certificate No.: 2017-3-30					
Contract No.: TWM P.O.No.: M49361319				Date of Issue.: 2017.3.25					
Commodity: Stainless Steel Seamless Tubes				Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW					
Process: Cold Drawn				Delivery Condition: OD Polished to 240 Grit					
Steel Grade	Heat Number	Lot Number	Dimensions	Quantity					
				Pieces	Feet				
TP304/TP304L	YX1604-531	1-64	1/2"x0.049"x20'	2000	40,000				
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.017	1.20	0.034	0.001	0.33	18.20	8.05	-	-
Product Analysis	0.017	1.25	0.030	0.002	0.32	18.31	8.12	-	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI) Rm		Yield Strength (PSI) Rp / 0.2%				
Requirements	≥35		≥75,000		≥30,000				
Test Results	61/62		97,000/98,000		42,000/43,000				
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-		
Test Results	-	77/79	-	Passed	Passed	-	OK		
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection				
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

**CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA**



By:

James Shi

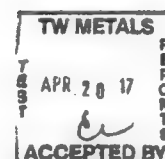
James Shi / Manager

Quality Control Department

We hereby certify that this report is true and correct.

Jiangsu Pufa Stainless Steel Tube Co., Ltd.

No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China



C

KAISER ALUMINUM FABRICATED PRODUCTS

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49369003-1		CUSTOMER PART NUMBER: 42558-144		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 223156	LINE ITEM: 001	SHIP DATE: 05/22/2017	KAISER LOT NUMBER: F00240838	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 610.000 LB	QUANTITY: 379.000 PCS	B/L NUMBER: 225370	DIAM/DAF/THKNS:	WIDTH:	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

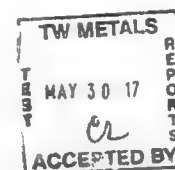
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00240838	0001	1	47.2	40.8	19.5	N/A	N/A	N/A
F00240838	0002	1	46.9	40.7	19.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D20128	.59	.30	.22	.05	1.03	.10	.04	.03	.00	.00	.00	.01	.03

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.0650"; Round @
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00025044
Kaiser Order Number: 223156
Line Item: 001

KAISER
ALUMINUM
FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

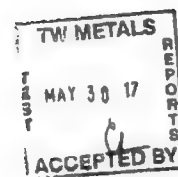
CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



KAISER ALUMINUM FABRICATED PRODUCTS

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49376296-1		CUSTOMER PART NUMBER: 41952		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 224194	LINE ITEM: 001	SHIP DATE: 09/23/2017	KAISER LOT NUMBER: F00250486	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 474.000 LB	QUANTITY: 585.000 PCS	B/L NUMBER: 226892	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW-METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

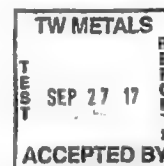
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00250486	0001	1	48.0	41.5	17.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D20419	.61	.27	.21	.04	.98	.09	.05	.03	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.3750"; Wall: 0.0580"; Round @
AMS4082P AMS-WW-T-700/6C ASTM B210-12
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA (DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5 TRADE AGREEMENTS).

Plant Serial: 00026215
Kaiser Order Number: 224194
Line Item: 001

AS

KAISER
ALUMINUM
FABRICATED PRODUCTS

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

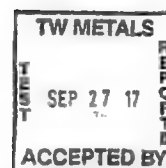
CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



Plant Serial: 00026215
Kaiser Order Number: 224194
Line Item: 001



KAISER ALUMINUM FABRICATED PRODUCTS

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49370848-1		CUSTOMER PART NUMBER: 42588		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 223458	LINE ITEM: 001	SHIP DATE: 06/27/2017	KAISER LOT NUMBER: F00243635	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 788.000 LB	QUANTITY: 284.000 PCS	B/L NUMBER: 225879	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

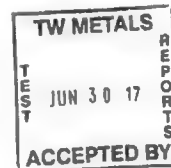
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00243635	0001	1	48.7	42.1	20.0	N/A	N/A	N/A
F00243635	0002	1	49.7	43.0	19.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D30206	.59	.29	.22	.03	.98	.07	.04	.03	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.1250"; Round @
AMS4082P **AMS-WW-T-700/6C** ASTM B210-12 WW-T-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00025411
Kaiser Order Number: 223458
Line Item: 001

16

KAISER
ALUMINUM
FABRICATED PRODUCTS

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226


CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



TW METALS	
TEST	JUN 30 17
ACCEPTED BY	



AB

Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: + 49.5254.81-0 Fax: + 49.5254.13866

BENTELER
Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

TW Metals
The Aboretum, Suite 204
780 Constitution Drive
EXTON PA 19341
USA

Dokument-Nr.: 41-1026599/001/P

Document No.:
No. du document:

Kunden-Bestell-Nr.:
Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.:
Benteler Order No.:
No. de commande Benteler:

Versandanzeigen-Nr.:
Dispatch Note No.:
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE
Product: SEAMLESS STEEL TUBES
Produit: TUBES D'ACIER SANS SOUDURE

46005343 TW M49371988

1639142

4114983

Prüf-Nr.:
Inspection No.:
No. du certificat:

Hersteller:
Manufacturer:
Producteur:

Herstellerzeichen:
Manufacturer's brand:
Marque du producteur:

Stempel des Abnahmebeauftragten:
Stamp of the inspection representative:
Poignon du contrôleur:

Stahlschmelzungsverfahren:
Steelmaking process:
Procédé d'élaboration de l'acier:

AMS-T-6736B-08 Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K

Lieferbedingungen:

Terms of delivery:

Conditions de livraison:

Maße - Toleranzen:

Dimensions-tolerances:

Dimensions-tolerances:

Stahlsorte:

Steel grade:

Nuance d'acier:

Lieferzustand:

Delivery condition:

État de livraison:

Produktkennzeichnung:

Product marking:

Marquage du produit:

AEZ = Ätzlinienbeschriftung, Etching ink marking, Gravure à l'encre · RK = Farbkennzeichnung, color marking, marquage par couleur · FS = Farbschablonierung, paint stenciling, marquage par peinture · FSD = Farbschablonendruck, Color jet printer, imprimante à jet d'encre de couleur · LK = Laserkennzeichnung, Laser marking, marquage laser · PKE = Etikettenkennzeichnung, tag marking, marquage sur étiquette · PS = Prägestempel, die stamp, marquage par poinçonnage · TS = Tintenstrahlkennzeichnung, ink jet spray marking, imprimante à jet d'encre

Pos.	Stück	Maße	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length total	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur totale	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
0012	153	0.750" O.D. ± 0.049" WT 20 FT - 24 FT	3664,37 feet	1345 lbs	606338			



Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: + 49.5254.81-0 Fax: + 49.5254.13686

BENTELER

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-1026599/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

Blatt: 2 / 3

Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	Si	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0012	606338	0,320	0,220	0,53	0,006	0,002	0,90	0,18	0,08	0,10

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	Si	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0012	606338	0,310	0,230	0,53	0,007	0,002	0,90	0,18	0,07	0,10

Prüfergebnisse / Test results / Résultats des essais

Die Rohre wurden zerstörungsfrei geprüft:

The tubes are non destructive tested:

Les tubes ont passé un essai non destructif:

ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperfections;

ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections;

Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)

PASSED

Augsichtskontrolle:	PASSED	Materialverwechslungsprüfung:	PASSED	Maßkontrolle:	PASSED
Visual inspection:		Material conformity test:		Dimensions examination:	
Examen visuel:		Vérification de la nuance:		Vérification des dimensions:	

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probenahme erfolgte an Vielfachlängen.

The sampling was carried out on multiple lengths.

L'échantillonnage était réalisé aux longueurs multiples.

Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette à section complète

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen				Rp 0,2 %	Rm	A2"
Requirements				KSI	KSI	%
Exigences			mm	MIN 75	MIN 95	MIN 12,00
0012	000001	606338	19,05 X 1,26	115	126	18,00
0012	000002	606338	19,05 X 1,26	116	127	20,00



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BENTELER

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

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Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complète

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen			mm	Rp 0.2 %	Rm	A2"
Requirements				KSI	KSI	%
Exigences				MIN 75	MIN 95	MIN 12.00
0012	000003	606338	19,05 X	1,26	126	19,00
0012	000004	606338	19,05 X	1,26	126	19,00
0012	000005	606338	19,05 X	1,26	126	19,00

Randentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0012

acc. to AMS-6360, partial decarburization outside max. 0.009 in, partial decarburization inside max. 0.009 in, partial decarburization outside and inside max. 0.012 in, partial decarburization outside and inside max. 0.305 mm, without total decarburization; partial decarb. out. max.: 0,229 mm; partial decarb. ins. max.: 0,229 mm

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0012

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K; see appendix page 1 of 1.

Pos. / Item / Poste: 0012

Macroscopic examination: acc. to ASTM-E 381

Pos. / Item / Poste: 0012

Magnetic particle inspection: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Pos. / Item / Poste: 0012

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure microscopy, on prematerial

Verkäufer(in) / Sales Personnel / Personne chargée: Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391

Paderborn Schloß Neuhaus, 06.09.2017, TEL.: 05254.81-201768 FAX: 05254.81-201752

Abnahmebeauftragter
Inspection representative

Contrôleur

I. A. THOMAS GOLLAN / Tat

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specifications. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.



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33104 Paderborn
Germany
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BENTELER
Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang
Inspection Certificate EN 10204.3.1 / appendix
Certificat de réception EN 10204-3.1 / appendice

Dokument-Nr.
Document No.: 41-1026599/001/P
No. de document:

Blatt: von
Page: 1 of 1
Page: de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fini: nuance 4130

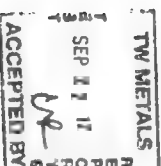
Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grossueur de grain (ASTM-E 112)	Härtebarkeit (min. Anforderungen) Hardenability (min. requirements) Trempeabilité (exigence min.) (ASTM-A 255)		Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301 K/ASTM-1444)		Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)		
		min. 5	J(5/16") min. 35 HRC	J(8/16") min. 28 HRC	F max. 0,34	S max. 0,25	max. S 2	max. R 1	max. C 2
606338	012	9-10	37	33	0,020	0,020	S 2	R 1	C 2
Decarburization Depth		Outside 0,000 mm	Inside 0,000 mm						

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 06.09.2017
Tel.: (0)5254 81-201760 Fax: (0)5254 81-201752

Abnahmebeauftragter
Inspection representative
Contrôleur

Thomas Gollan



Benteler Steel/Tube GmbH
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Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
EN 10204:2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

TW Metals
The Aboretum, Suite 204
780 Constitution Drive
EXTON PA 19341
USA

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Dokument-Nr.: 41-1007237/001/P

Document No.:
No. du document:

Kunden-Bestell-Nr.: 46004962TW M49365374

Purchase Order No.:
No. de commande du client:

Benteler Auftrags-Nr.: 1634562

Benteler Order No.:
No. de commande Benteler:

Versandanzeigen-Nr.: 4195453

Dispatch Note No.:
No. d'avis d'expédition:

Produkt: NAHTLOSE STAHLROHRE

Product: SEAMLESS STEEL TUBES

Produit: TUBES D'ACIER SANS SOUDURE

Hersteller: Warmrohrwerk/Zieherei

Manufacturer: (DIN EN ISO 9001, ISO 9001:1994 CERTIFIED BY TÜV NORD CERT)
(PED 2014/68/EU CERTIFIED BY TÜV NORD SYSTEMS)

Herstellerzeichen:

Manufacturer's brand:
Marque du producteur:

Stempel des Abnahmebeauftragten: WA

Stamp of the inspection representative:
Poinçon du contrôleur:

Stahlschmelzungsverfahren: ELEKTROSTAHL

Steelmaking process: ELECTRIC FURNACE

Procédé d'élaboration de l'acier: FOUR ELECTRIQUE



Lieferbedingungen: AMS-T-6736B-08 Type 1, ASTM-A 519-2006 (MIL-T-6736B) Type 1, AMS6360 Rev. M, AMS 2301K

Terms of delivery:

Conditions de livraison:

Maße - Toleranzen:

Dimensions-tolerances:

Dimensions-tolérances:

Stahlsorte:

Steel grade:

Nuance d'acier:

Lieferzustand:

Delivery condition:

État de livraison:

Produktkennzeichnung:

Product marking:

Marquage du produit:

AEZ = Auslinienbeschriftung, Etching ink marking, Gravierure à l'encre, RK = Farbkennzeichnung, color marking, marquage par couleur, PS = Farbschablonierung, paint stencilling, marquage par peinture, P50 = Farbstandrunder, Color jet printer, Imprimante à jet d'encre de couleur, UK = Leserkennzeichnung, Laser marking, Marquage laser, PKE = Etikettienzeichnung, tag marking, marquage sur étiquette, P5 = Prägestempel, die stamp, marquage par poinçonnage, TS = Thienstrahlkennzeichnung, ink jet spray marking, imprimante à jet d'encre.

FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO.

CD AQ S DIMENSIONS WA GERMANY

Pos.	Stück	Maße	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length total	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur totale	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
		feet	feet	lbs				
0012 91		0.750" O.D. * 0.083" WT 20 FT - 24 FT	1851,05	1080	503114			

1

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Deutschland
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BENTELER
Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-1007237/001/P
Document No.:
No. du document:

Prüf-Nr.:
Inspection No.:
No. du certificat:

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Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0012	603114	0,310	0,240	0,56	0,005	0,001	0,87	0,17	0,08	0,11

Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0012	603114	0,300	0,230	0,53	0,006	0,001	0,87	0,17	0,08	0,11

Prüfergebnisse / Test results / Résultats des essais

Die Rohre wurden zerstörungsfrei geprüft:
The tubes are non destructive tested:
Les tubes ont passé un essai non destructif:
ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperfections;
ET-test: ET with rotating pancake coils; according to EN 10246-3; Imperfections;
Notch depth: 0.30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)

PASSED

Augensichtkontrolle:

Visual inspection:

Examen visuel:

PASSED

Materialverwechslungsprüfung:

Material conformity test:

Vérification de la nuance:

PASSED

Maßkontrolle:

Dimensions examination:

Vérification des dimensions:

PASSED

Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probennahme erfolgte an Vielfachlängen.
The sampling was carried out on multiple lengths.
L'échantillonnage était réalisé aux longueurs multiples.

Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complete

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen			Rp 0,2 %	Rm	A2"	1. Formel
Requisiments			mm	KSI	%	1. Formule
Exigences			MIN 75	MIN 95	MIN 12.00	1. Formule
0012	000001	603114	19,04 X 2,12 103	123	20,00	
0012	000002	603114	19,04 X 2,12 103	123	18,00	



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Page: Page:
Page: Page:

Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Eprouvette a section complete						
Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. de l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Allongement
Anforderungen				Rp 0,2 %	Rm	A2"
			mm	KSI	KSI	%
				MIN 75	MIN 95	MIN 12.00
0012	000003	603114	19,04 X 2,12	102	123	18,00

Randentkohlung / Surface decarburization / Décarburation superficielle

acc. to AMS-6360, partial decarburization outside max. 0.014 in, partial decarburization inside max. 0.014 in, partial decarburization outside and inside max. 0.018 in, partial decarburization outside and inside max. 0.457 mm, without total decarburization; partial decarb. out. max.: 0,356 mm; partial decarb. ins. max.: 0,356 mm

Vermerk / Remark / Remarque

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225-5 CAN COMPLY, No weld repair has been carried out, Country of origin of the material and heat: Germany, Aircraft quality steel acc. to AMS 2301K; see appendix page 1 of 1.

Macroscopic examination: acc. to ASTM-E 381

Magnetic particle inspect.: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure microscopy, on prematerial

Verkäufer(in) / Sales Personnel / Personne chargée: Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391



Paderborn Schloß Neuhaus, 28.05.2017, TEL.: 05254.81-201768 FAX: 05254.81-201752

Abnahmebeauftragter
Inspection representative

Contrôleur

i. A. THOMAS GOLLAN / Tat

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

Benteler Steel/Tube GmbH
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Germany
Tel.: 49.5254.81-0 Fax: 49.5254.13666

BENTELER
Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang
Inspection Certificate EN 10204.3.1 / appendix
Certificat de réception EN 10204-3.1 / appendice

Dokument-Nr.
Document No.: 41-1007237/001/P
No. de document:

Blatt: von
Page: 1 of 1
Page: de

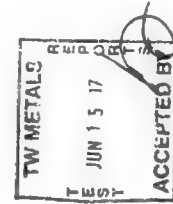
Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fini: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härbarkeit (min. Anforderungen) Hardenability (min. requirements) Trempeabilité (exigence min.) (ASTM-A 255)		Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301 K/ASTM- 1444)	Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)		
			J(5/16") min. 35 HRC	J(8/16") min. 28 HRC		max. S 2	max. R 1	max. C 2
603114 Decarburization Depth	012	min. 5			F max. 0,34	S max. 0,25		
		9 Outside 0,000 mm	40 Inside 0,000 mm	32	0,020	0,015	R 1	C 2

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 29.05.2017
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

Abnahmebeauftragter
Inspection representative
Contrôleur
Thomas Gollan



MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130N TO .750W.083

PO / BATCH NO.: 038420/5017143

DATE: DEC 05 2017

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 20'
 QUANTITY INSPECTED: 20'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .750
 THICKNESS RECEIVED: .750
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	<u>mil-#67360</u>
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	<u>heat # 603114</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>[Signature]</u> DATE: <u>DEC 05 2017</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 4130N SEAMLESS STEEL TUBING
SPECIFICATION: MIL-T-6736 OR AMS 6371, 6360, 6361, 6362, 6373, 6374
PART NUMBER: M4130N TO DDD W.TTT | DIA. | WALL | WHERE: "D.DDD" = OUTER DIAMETER (IN INCHES)
AND "TTT" = WALL THICKNESS (IN INCHES)

EG. 3/4" TUBING WITH .035" WALL = M4130NTO.750W.035

RELEASE
2012-04-16

B		REFORMAT DWG TO ACCOMMODATE ADDITIONAL TUBE DIAMETERS AND WALL THICKNESS		RP	12.04.02
A		NEW ISSUE		JB	01.05.16
REV		DATE			
DESIGN		DESCRIPTION			
DRAWN		JB	RP	DART AEROSPACE LTD	
CHECKED		AP	RP	HAWKESBURY, ONTARIO, CANADA	
MFG APPR		AP	RP	DRAWING NO.	
APPROVED		AP	RP	M4130N-T	
DE APPR		AP	RP	REV. B	
DATE		12.04.02	12.04.02	SHEET 1 OF 1	
				SCALE	
				NTS	
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130N10.750W.049
 DATE: DEC 05 2017

PO / BATCH NO.: 038420/5017142

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 24'
 QUANTITY INSPECTED: 24'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .750
 THICKNESS RECEIVED: .750
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y	N	
CORROSION	Y	<input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	N	<u>mil-T-6736B</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y	N	
PHOTO REQUIRED	Y	<input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	N	<u>Heat # 606338</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>AL</u> DAS	SIGNED OFF BY: _____		
DATE: <u>DEC 05 2017</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: AISI 4130N SEAMLESS STEEL TUBING

SPECIFICATION: MIL-T-6735 OR AMS 6371, 6380, 6361, 6362, 6373, 6374

PART NUMBER: M4130N ID.DDD W.TTT

WHERE: "DDD" = OUTER DIAMETER (IN INCHES)
AND "TTT" = WALL THICKNESS (IN INCHES)

DIA.	WALL

EG. 3/4" TUBING WITH .035" WALL = M4130NT0 750W.035

RELEASE
2012-04-16

B	REFORMAT DWIG TO ACCOMMODATE ADDITIONAL TUBE DIAMETERS AND WALL THICKNESS	RP	12.04.02
A	NEW ISSUE	JB	01 05 16
REV	DESCRIPTION	BY	DATE
DESIGN		JB	
DRAWN		RP	
CHECKED		AP	
MFG. APPR.		BP	
APPROVED		WJ	
DE APPR.			
DATE			12.04.02

DART AEROSPACE LTD
 HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **M4130N-T**

TITLE **STEEL TUBING**

SCALE **1 OF 1**

REV. B

SHEET 1 OF 1

NTS

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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6to.625w.125

PO / BATCH NO.: 038420 / 5017141

DATE: DEC 05 2017

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 12'
 QUANTITY INSPECTED: 12'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625
 THICKNESS RECEIVED: 0.625
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	<u>Ams-WW-T-700/6C</u>
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	<u>Heat # P002436350002</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.
 RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>[Signature]</u>	SIGNED OFF BY: _____		
DATE: <u>DEC 05 2017</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 8081-T8/62/6510/6511 SEAMLESS TUBING

SPECIFICATION:

WV-T-200/8
OR QQ-A-200/8 OR QQ-A-225/8
OR AMS 4080 OR AMS 4082 OR AMS 4083
OR ASTM B210 OR ASTM B241

PART NUMBER:

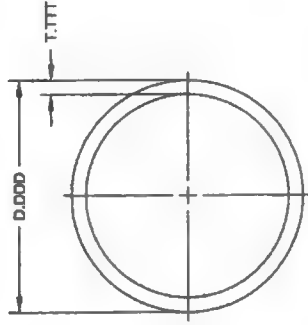
M6061T6T0.DDD|WT.TTT|
OD | WALL

WHERE "D.DDD" = OD IN INCHES
"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058

MATERIAL TOLERANCE:

PER ANSI H35.2 $\triangle C$



RELEASED
N 2013-07-02
JMP

C	COMPLETE REFORMAT, ADDED T8510 & T8511, ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.08.21
REV.	DESCRIPTION	BY	DATE
DESIGN		AJS	
DRAWN		AJS	
CHECKED		W	
MFG. APPR.		W	
APPROVED		W	
DE APPR.		W	
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO.		REV. C	
M6061T6T		SHEET 1 OF 1	
TITLE		SCALE	
6081-T8 TUBING		NTS	
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6T0.375W.058
 DATE: DEC 05 2017

PO / BATCH NO.: 038420/5017140

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 24"
 QUANTITY INSPECTED: 24"
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .375
 THICKNESS RECEIVED: .375
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y N	AMS-WW-T-700/6C
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y N	Heat # P002504860001
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>[Signature]</u> DATE: <u>DEC 05 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION:

WWT-700/8
OR QQ-A-200/8 OR QQ-A-225/8
OR AMS 4080 OR AMS 4082 OR AMS 4083
OR ASTM B210 OR ASTM B241

PART NUMBER:

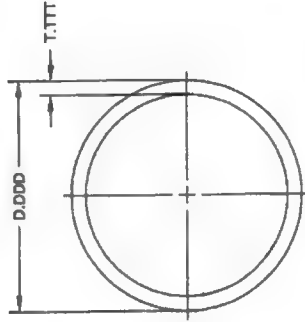
M6061T6T6.DDDWWT.TTT
OD WALL

WHERE "D.DDD" = OD IN INCHES
"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T6T6.375W0.058

MATERIAL TOLERANCE:

PER ANSI H35.2 /C



RELEASED
R 2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED	W		
MFG. APPR.	W		
APPROVED	W		
DE APPR.	W		
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. REV. C			
M6061T6T6 SHEET 1 OF 1			
TITLE SCALE			
6061-T6 TUBING NTS			
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6 0.625w.065
 DATE: DEC 05 2017

PO / BATCH NO.: 038420/5017139

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 36"
 QUANTITY INSPECTED: 36"
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625
 THICKNESS RECEIVED: 0.625
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	UW-T-700/6c
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Heat # P002408380002
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>[Signature]</u> DATE: <u>DEC 05 2017</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 6061-T6/7050-T6/7051 SEAMLESS TUBING

SPECIFICATION:

WWT-70008
OR QQ-A-200/8 OR QQ-A-225/6
OR AMS 4080 OR AMS 4082 OR AMS 4083
OR ASTM B210 OR ASTM B241

PART NUMBER:

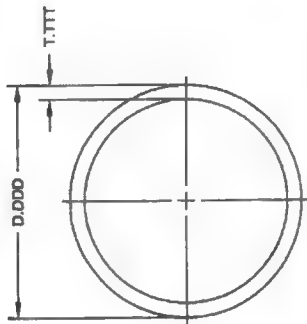
M6061T6T6D.DDQW/T.TTT
OD | WALL

WHERE "D.DDD" = OD IN INCHES
"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T6T6D.375W0.058

MATERIAL TOLERANCE:

PER ANSI H35.2



RELEASED
N 2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/6	CP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED			
MFG. APPR.	M6061T6T		
APPROVED			
DE APPR.			
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
REV. C			
SHEET 1 OF 1			
SCALE			
6061-T6 TUBING			
NTS			
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304tro.500w.049
 DATE: DEC 05 2017

PO / BATCH NO.: 038420/5017138

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 40'
 QUANTITY INSPECTED: 40'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .500
 THICKNESS RECEIVED: .500
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>Astm A213-15C</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u># YX 1604531</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>nd</u> DATE: <u>DEC 05 2017</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE OD TOL (IN)	PERMISSIBLE WALL TOL
UP TO 1/4	+0.005	+15%
1/4 TO 1 1/2 EXCL.	+0.005	+10%
1 1/2 TO 3 1/2 EXCL.	+0.010	+10%
3 1/2 TO 8 EXCL.	+0.015	+10%
8 TO 12 EXCL.	+0.030	+10%

PART NUMBER:

M304TR10.DDD|W|.TTT
OD | WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES
AND ".TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0.375W.065

RELEASED
NOV 18 13 1430

B	REFORMAT DWG. ADD SPECS (ZN DB-1).	CP	08 10 20
A	NEW ISSUE	DS	01 06 08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DATE	08.10.20		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304TR			
TITLE 304/316 ROUND TUBING			
SHEET 1 OF 1			
REV. B			
SCALE NTS			
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304/Tr0.750W.049

PO / BATCH NO.: 038420/5017137

DATE: DEC 05 2017

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: 0.750

QUANTITY RECEIVED: 160'

THICKNESS RECEIVED: 0.750

QUANTITY INSPECTED: 160'

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL PER M-DRAWING	Y	N	<u>Astm A213-15c</u>
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT REF # TO LINK CERT	Y	N	<u>Heat # YX1108593</u>
CORRECT MATERIAL IDENTIFICATION	Y	N	
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>[Signature]</u>	DAS 9	SIGNED OFF BY: _____	
DATE: <u>DEC 05 2017</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING
 SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE	PERMISSIBLE
OD TOL. (IN)	OD TOL. (IN)	WALL TOL.
1/2 TO 1/2	±0.005	±15%
1/2 TO 1 1/2, EXCL.	±0.005	±10%
1 1/2 TO 3 1/2, EXCL.	±0.010	±10%
3 1/2 TO 5 1/2, EXCL.	±0.015	±10%
5 1/2 TO 8, EXCL.	±0.030	±10%

PART NUMBER:

M304TR/D.DDD/W.TTT
 OD | WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES
 AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0.375W.065

RELEASED
 08/08/23 14:13

B		REFORMAT DWG. ADD SPECS (2N DB-1).		CP	08.10.20
A		NEW ISSUE		DS	01.06.08
REV		DESCRIPTION		BY	DATE
DESIGN		DART AEROSPACE LTD			
DRAWN		HAWKESBURY, ONTARIO, CANADA			
CHECKED		DRAWING NO.	M304TR		
MFG. APPR.		TITLE	304/316 ROUND TUBING		
APPROVED		DE APPR.	SCALE		
DATE	08.10.20	SHEET 1 OF 1			

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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NT1.0004.120

PO / BATCH NO.: 038420/5017136

DATE: DEC 05 2017

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 20"
 QUANTITY INSPECTED: 20"
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1"
 THICKNESS RECEIVED: 1"
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>mil-T6736 B</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N	<u>Heat # 606333</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>rd</u>	DAS 9 DEC 05 2017	SIGNED OFF BY: _____	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 4130N SEAMLESS STEEL TUBING

SPECIFICATION: MIL-T-6738 OR AMS 6371, 6380, 6361, 6362, 6373, 6374

PART NUMBER: M4130N TO DDD W. TTT | DIA. | WALL | WHERE: "D.DDD" = OUTER DIAMETER (IN INCHES)
AND "TTT" = WALL THICKNESS (IN INCHES)

EG. 3/4" TUBING WITH .035" WALL = M4130NTO.750W.035

RELEASE
R 2012-04-16

B	REFORMAT DWG TO ACCOMMODATE ADDITIONAL TUBE DIAMETERS AND WALL THICKNESS		RP	12.04.02
A	NEW ISSUE		JB	01.05.16
REV.	DESCRIPTION		BY	DATE
DESIGN	JB			
DRAWN	RP			
CHECKED	AP			
MFG. APPR.		DRAWING NO. M4130N-T		REV. B
APPROVED		TITLE		SHEET 1 OF 1
DE APPR.		STEEL TUBING		SCALE
DATE	12.04.02			NTS

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